Sentinel Viewer version 1.1

User Manual

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Document v0.1

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Overview

Sentinel Viewer is the client-side application for monitor data from IMS system. Sentinel Viewer provides you with ability to view series of data from device as chart, ability to search for specific cycle and event and many more.

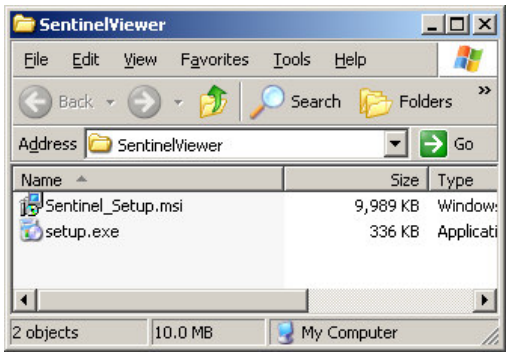
Hardware/Software Requirements

- Memory: Minimum: 256 MB, recommended: 1 GB or above
- CPU: recommended: 1.8 GHz
- Microsoft Windows XP service pack 2
- Microsoft .Net runtime framework 2.0 or above

Installing Sentinel Viewer

To install Sentinel Viewer on your machine, proceed as follows.

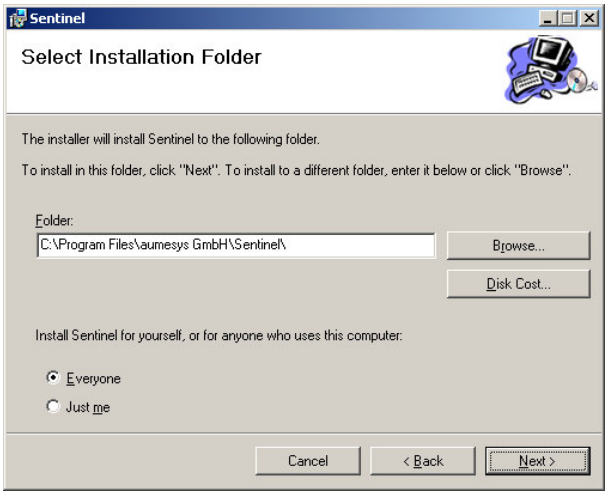
1. Double click setup.exe file



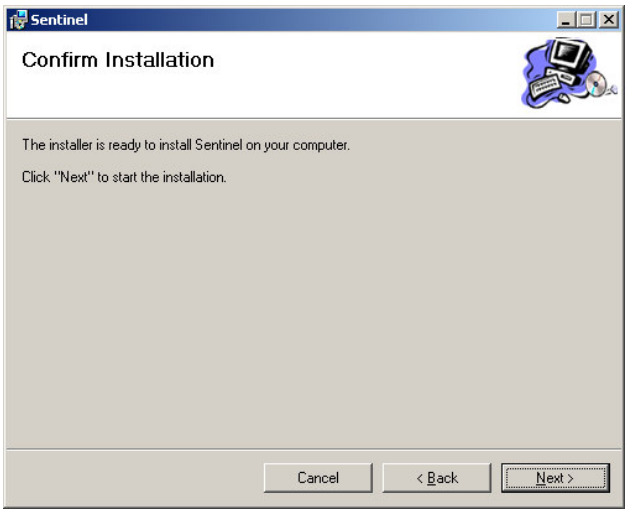
2. Click “Next”

Sentinel
Welcome to the Sentinel Setup Wizard
The installer will guide you through the steps required to install Sentinel on your computer.
WARNING: This computer program is protected by copyright law and international treatie.
Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

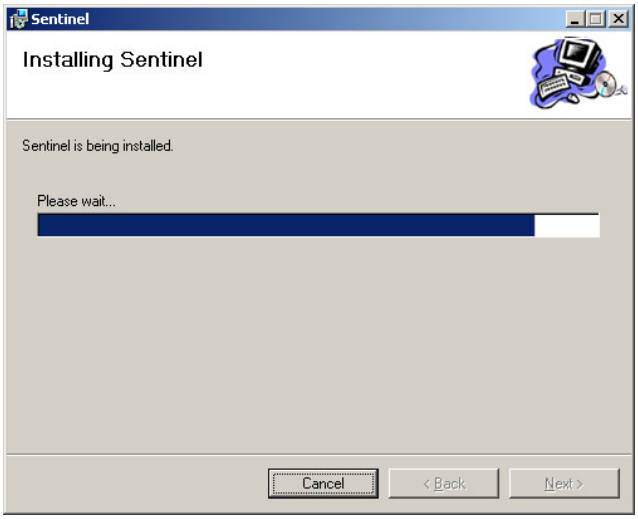
3. Select where to install Sentinel Viewer or accept the default and click “Next”


Sentinel
Select Installation Folder
The installer will install Sentinel to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files\aumesys GmbH\Sentinel\
Browse...
Disk Cost...
Install Sentinel for yourself, or for anyone who uses this computer:
Everyone
Just me
Cancel
< Back
Next >

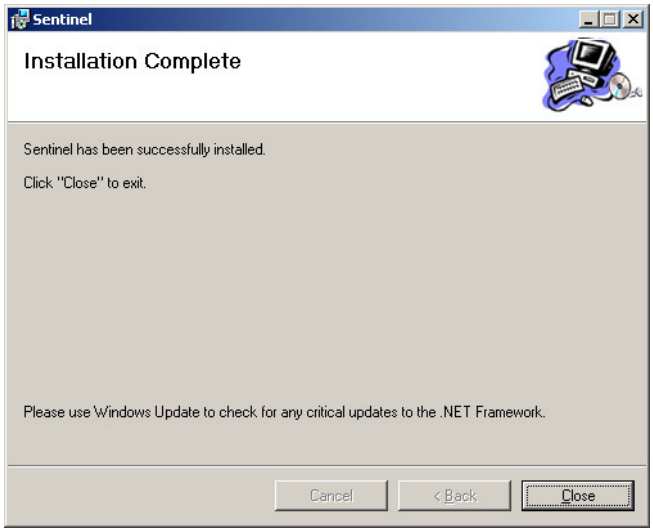
4. Click Next to start the installation process.


Sentinel
Confirm Installation
The installer is ready to install Sentinel on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >

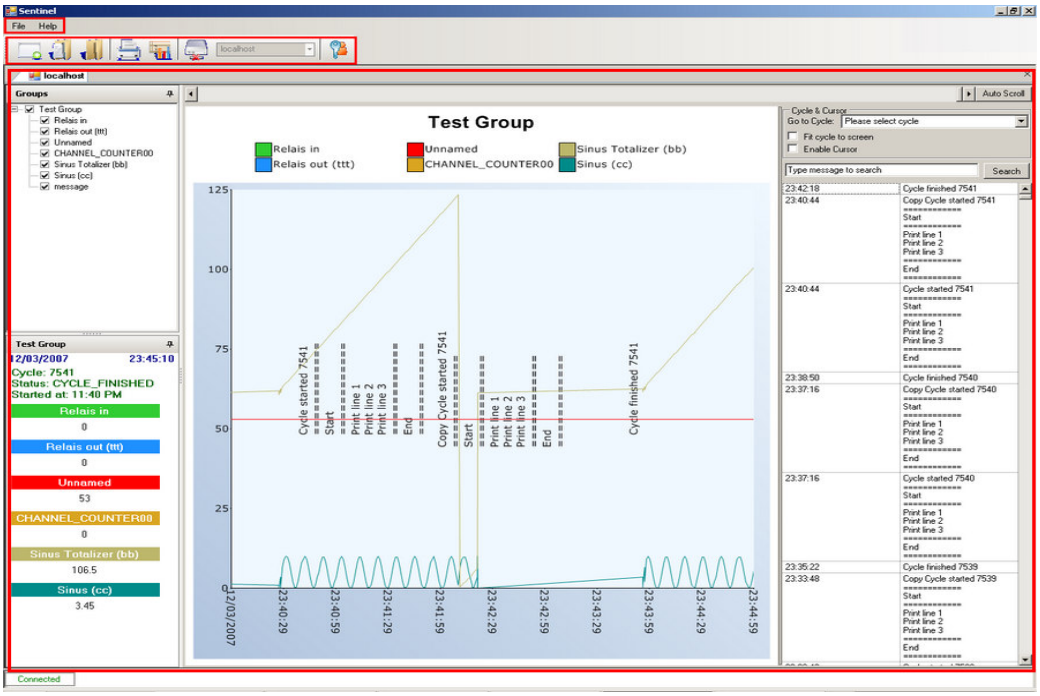
5. Wait for the installation to complete.



6. The installation of Sentinel Viewer is now completed. Click “Close” to finish the installation.



User Interface Overview



The Sentinel viewer user interface consists of a:

- Tool bar
- Menu bar
- Page

Tool bar

The tool bar is used to open the data files and for connecting to a device.

From left to right, tool bar contains the following action.

New tab

Click new tab button to open a new view tab. A new tab is useful when you want to connect to more than one device since each view tab can only display a single connection.

Open file

To open snapshot of data file collected previously, use “Open file” button.

Open Folder

This action is used to open a folder that contains group of data files from the same device. The data of the same group will be merged in to one chart.

Print

Use “Print” function to print the current active view tab. See Printing topic for more information.

Toggle table view

Normally the data is display as a chart. However, it is possible to display data in a table using “Toggle table view” button.

Current limitation:

It is not possible to scroll and view the tabular data when connecting to a live device or to print a table view.

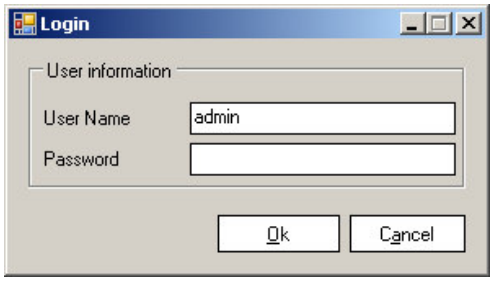
Connect / Disconnect to a device.

To connect to a live device, to get live stream of data, use “Connect to Device” button.

First, enter the device's address (IP address or machine name) in to the address box.

Then click “Connect to device” button.

A Login dialog will appear. Enter user name and password and click “Ok” to connect to the device.



When “Connect to device” button is clicked, there is not any tab or the current active tab is a snapshot data tab, a new tab will be automatically opened.

If the current active tab is a live view, this same button can be used to disconnect from the connected device of the current active tab. Therefore, if you only have one tab that is already in live mode (connecting to a device) you have to click “New tab” button to open new tab before you can connect to a new device from that newly opened tab.

Current limitation:

Do not try connecting to the same IP address while you are already connected to it.

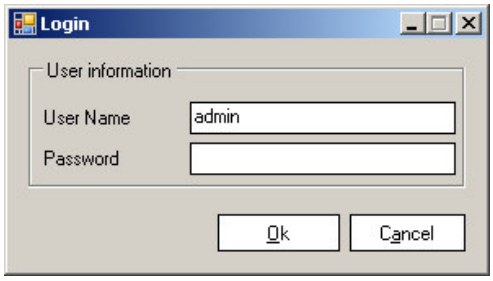
Login to a Device

To connect to a device for configure parameters and behaviors of the device, use “Login to a Device” button.

First, enter the device's address (IP address or machine name) in the address box.

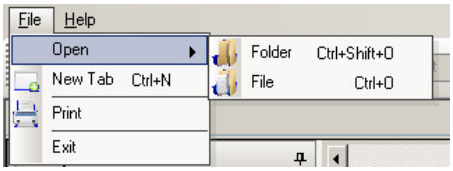
Then click “Login” button.

A Login dialog box appears. Enter user name and password and click “Ok” to login to the device.



The Configuration view appears (see the Configuration section for more information).

Menu bar

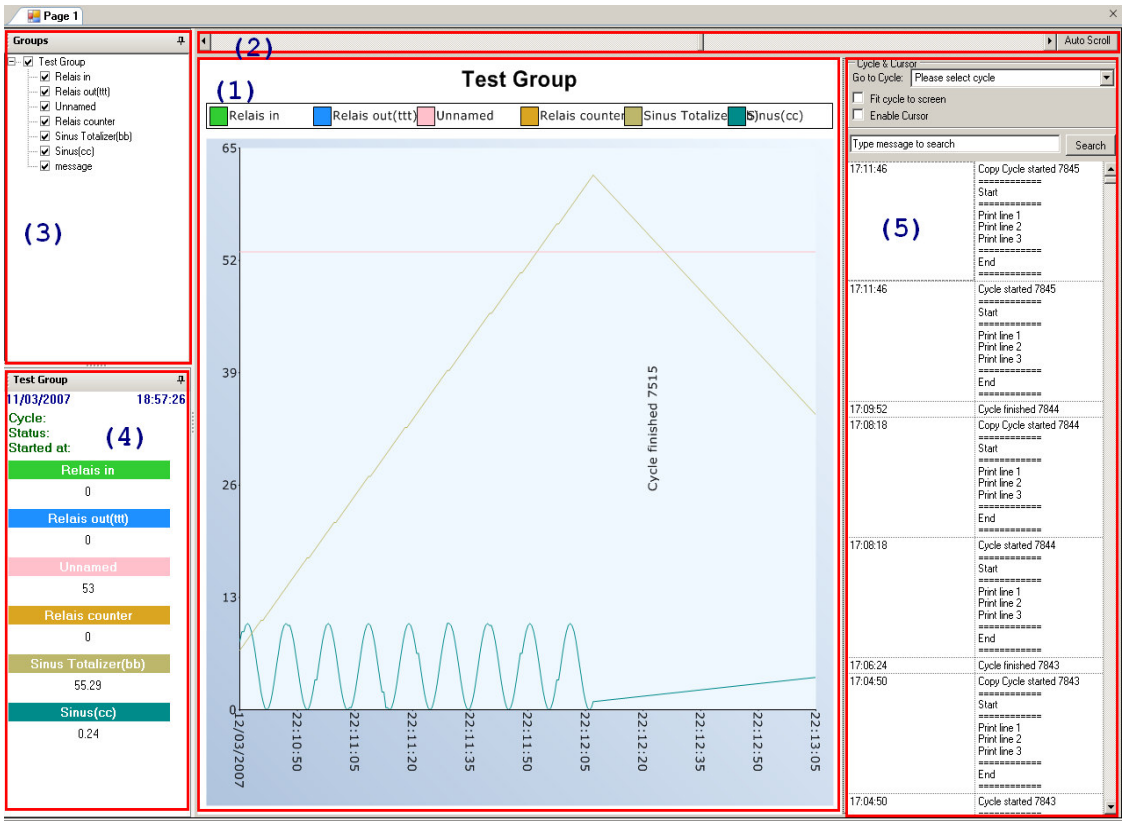


The menu bar allow user to do following action:

- **Open Folder**
- **Open File**
- **Open New Tab**
- **Print**
- **Exit the application**

See Tool bar section for description on each actions.

Chart Page



Each page represents one connection to a device/file.

A page consists of:

- Chart view
- Time line scroll bar
- Groups box
- Information box
- Message box

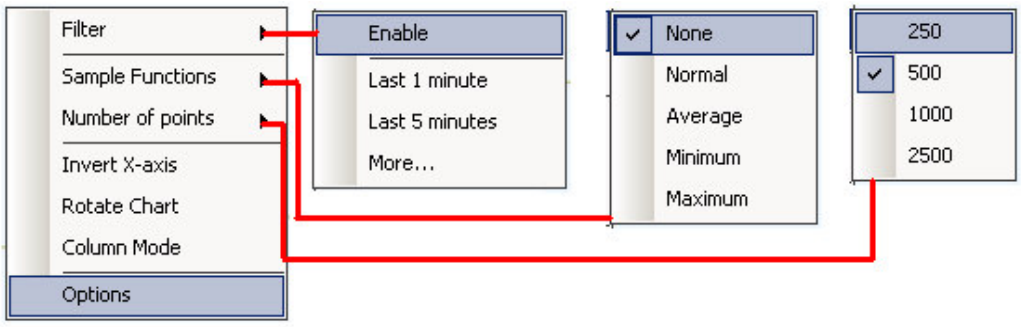
Chart view

This is the main view that shows the from each channel as line chart. The X-axis is the time axis and Y-axis is value of the channel at the time.

The time axis is divided in to, by default, 10 intervals. Each interval has a time label on it. When a chart is scrolled to left, or right, it will be scroll one interval at a time.

User Chart Configuration

If you right click on the chart area, you can customize some behavior of the chart control.



Filter

When you want to see only the last specific period of the data, use Filter. Filter enable you to see only the last, for example, five minutes of the whole series. When Filter is enabled, scrolling to left edge will only go back as far as, in this case, five minutes.

Use “More...” button to set up a customized time period that you want.

Sample Functions

If the number of points on the chart is too much, you can reduce number of points with “Sample Function” so that only some of the points are shown. When sampling is made, the whole time line of the series is divided into sections, number of sections is specified by “Number of Points” setting. Then a point from each section is elected. There are five sample functions available:

- **None:** The sample function is not enabled.
- **Normal:** The value at the edge of each section is selected.

- **Average:** New point is derived to represent the average of all point in each section.
- **Minimum:** The point with minimum value in that section is selected.
- **Maximum:** The point with maximum value in that section is selected.

NOTE:

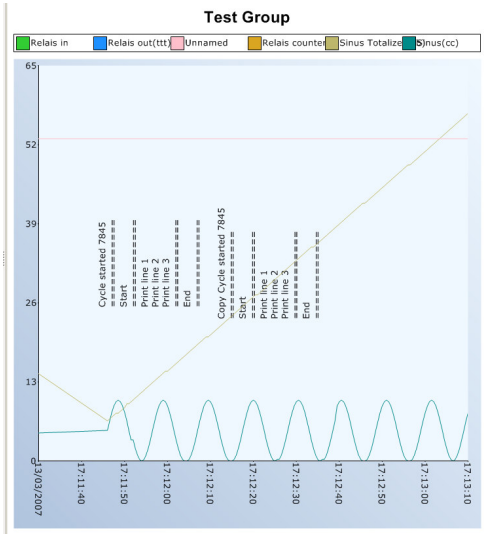
Application may become slow when Sample function is used.

Number of Points

This setting changes the number of sections to divide when “Sample Functions” is enabled.

Invert X-axis

Select this when you want the time scale in X-axis to start from current date time at left edge and goes back in the past to right edge.



Normal Chart

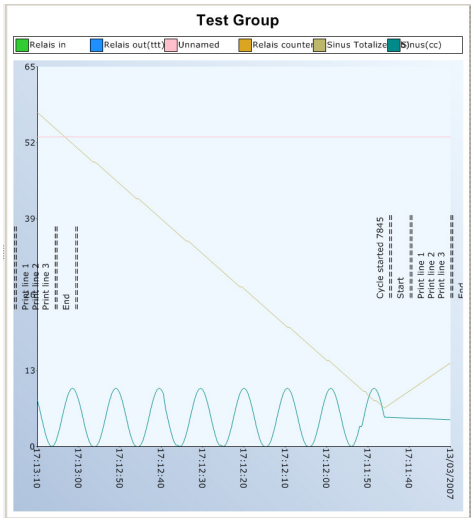
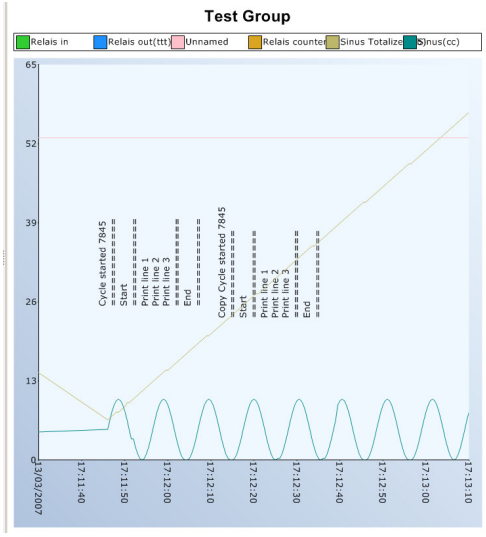


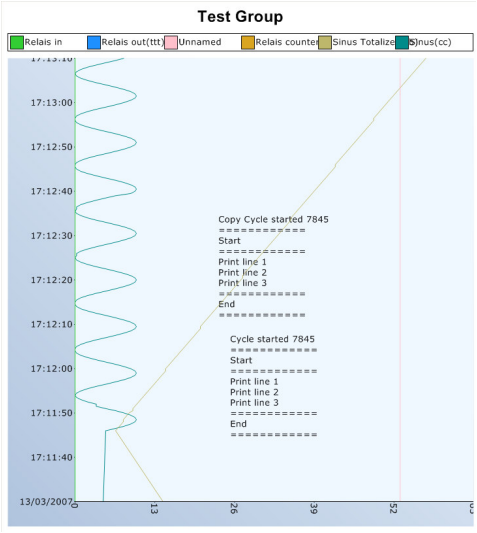
Chart with X-axis inverted

Rotate Chart

“Rotate Chart” command swaps between the X-axis and Y-axis.



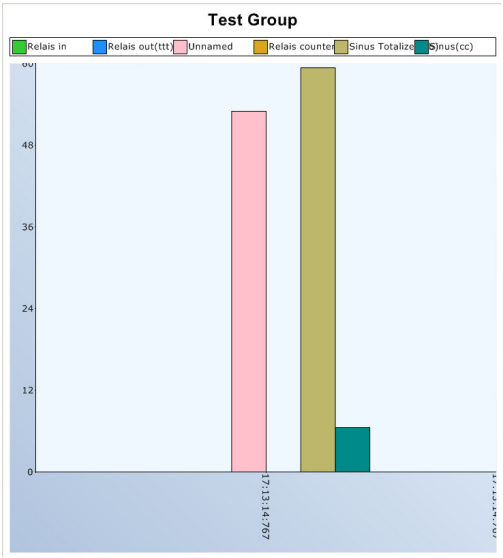
Normal Chart



Rotated Chart

Column Mode

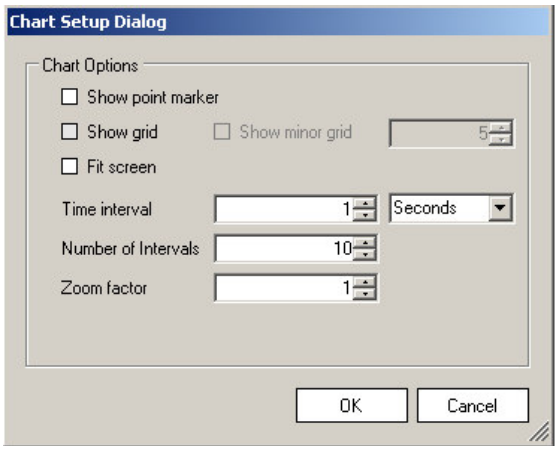
Instead of viewing the whole series of data you may choose to view just the data at a specific single point of time. “Column mode” show value from each channel as a bar, it shows data at a single time instance.



Column Mode

Options (Chart Setup)

When “Options” command is selected Chart setup dialog will appear. Following options can be set.

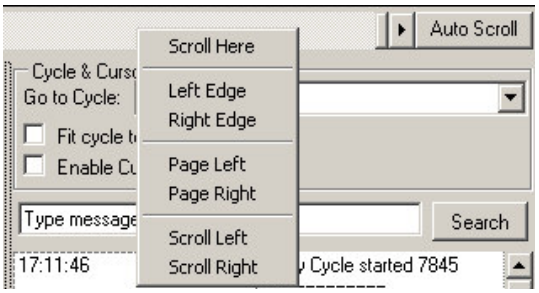


- **Show point marker:** This will mark each point in the graph with a cross, so that it is easy to see where each point lies.
- **Show grid:** Enable this option to draw a line at each time and value label. In other words, this option will cause the chart to draw grid at each interval.
- **Show minor grid:** draw a minor grid inside each interval.
- **Fit Screen:** Zoom out as much as needed to fit the whole time line of chart data in to the screen. NOTE: This function is very slow once you have lots of data. This function is only recommended on snapshot (non-live) data from file, or when you enable "Filter" of five minutes or less on live device connection.
- **Time interval:** Specify the size and unit of time period for each interval.
- **Number of intervals:** Specify number of interval above that is show in the chart. For example, if you set interval to one second, and set number of intervals to 10, then the chart will show the time period of ten seconds.
- **Zoom factor:** When your mouse is over the chart area, you can use mouse wheel to zoom in or out in the chart. When zooming in the time interval will be subtracted by this zoom factor. For example, if the current time interval is ten seconds and you set the zoom factor to three, when you use the mouse wheel to zoom in, your time interval will be reduced to seven seconds. Or if you zoom out then time interval will be increased to thirteen seconds. The unit of zoom factor is the same as unit of time in "Time interval" setting.

NOTE: Since the zoom factor is affected by unit of time in "Time interval" option, the zooming may not be noticeable if you try to zoom when you are at a very small time unit. For example, zooming in when your time interval is set to 3000 milliseconds will be hard to notice since you are zooming from 3000 milliseconds to 2999 milliseconds.

Time line scroll bar

To move through time in the chart, move marker in this scrollbar.



When you right-click on scroll bar, a menu will pop up to show commands:

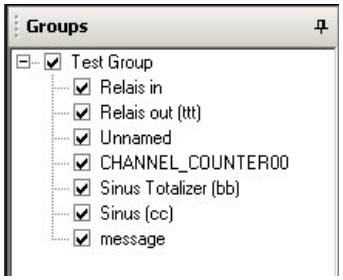
- **Scroll Here:** move the scroll bar marker to see chart at that date time of scroll bar.
- **Left/Right Edge:** move the marker to left/right most date time.
- **Page Left/Right:** move the marker one page to the left/right so that the the current time in the chart is completely out of the view.
- **Scroll Left/Right:** move the marker one interval to the left/right.

Auto Scroll

When you are connecting to a device (live mode) you can click "Auto Scroll" button to set scroll bar marker to always on the right most edge. In auto scroll mode, when a device has more live data, the chart will be automatically updated to see the most updated data.

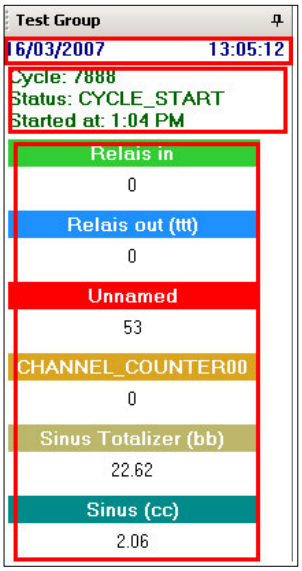
NOTE: The chart will be updated one interval at a time, so if the chart is viewing big interval, you will have to wait before the next interval is updated.

Groups box



The Groups window shows a tree-styled view of all the groups on this page and all of their channels. You can uncheck the check box to hide a particular channel data from displaying in the chart.

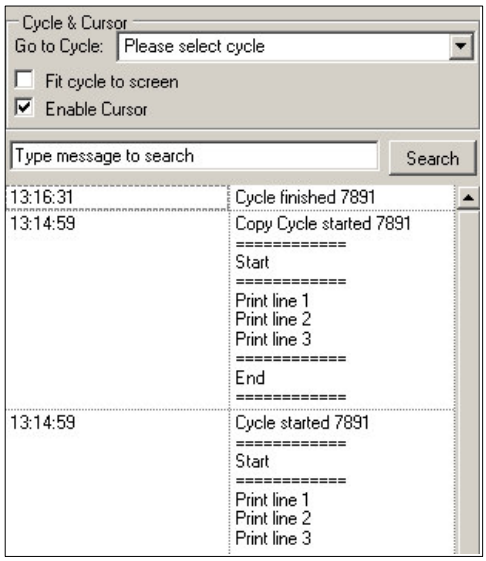
Information box



Information box contains:

- **Date time information:** shows the last update time of data, or, if you enable chart cursor, the date time at the point of the chart cursor.
- **Current cycle information:** shows the last updated information about current cycle, such as cycle name, cycle status as cycle start time.
- **Channel data information:** shows the last updated value of each channels, only the unhidden channel will be shown. See “Groups box” on how to hide a channel data. When you enable chart cursor, this will show the channel value at the point of the chart cursor.

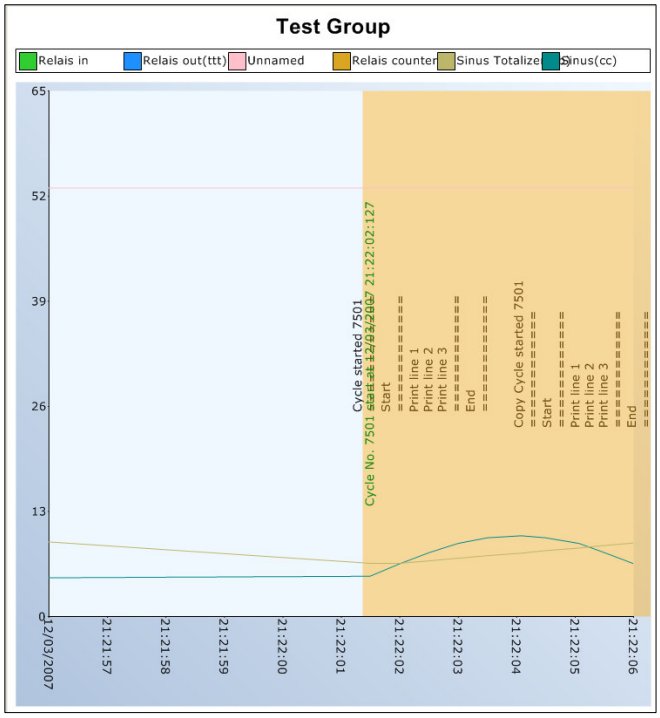
Message box



Message box shows list of message from the device. Moreover Message box also contains the following function.

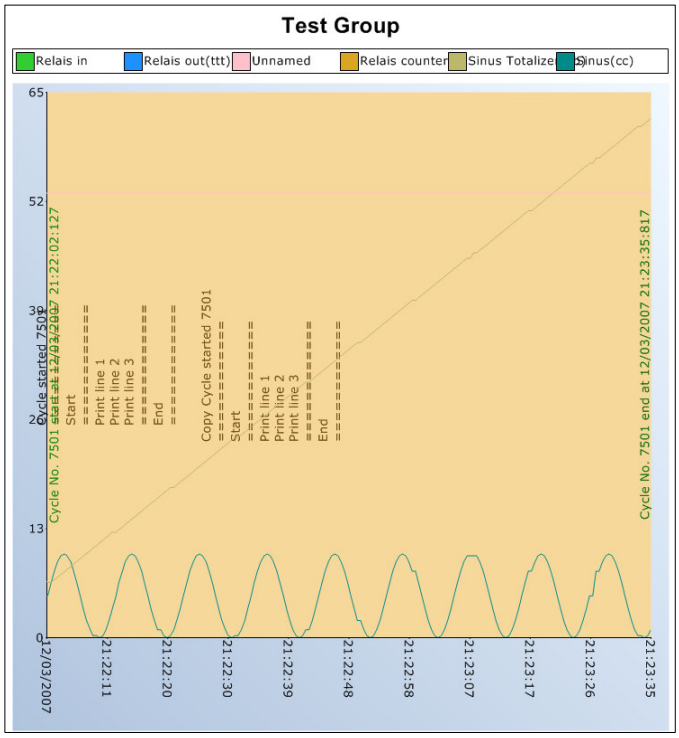
Go to cycle

When you select a cycle from the combo box, the chart will jump to the time where the cycle starts. The cycle will be highlighted.



Fit cycle to screen

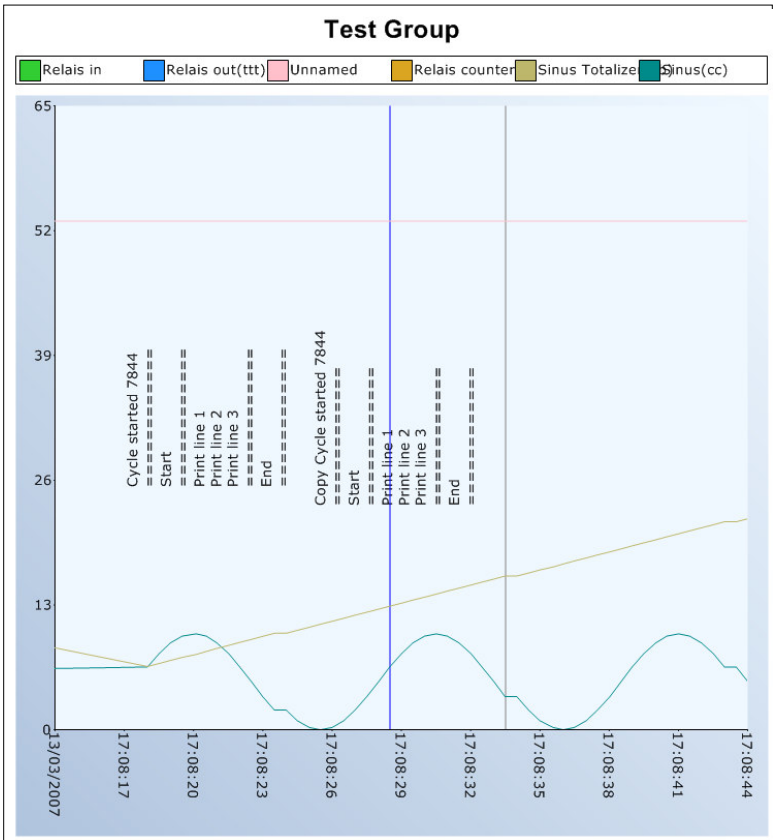
After you have selected a cycle and you want to see the whole cycle in the chart, check “Fit cycle to screen” check box. This will fit the selected cycle to the chart.



Enable Cursor

Cursor is useful when you want to see channel value at specific point in time.

- To use cursor, check “Enable Cursor” check box. The cursor line will appear in the chart as a purple line.
- To move cursor, click and drag the cursor line, a gray will appear to show the new cursor position. Release mouse button to accept new cursor position.



Cursor line and new position line

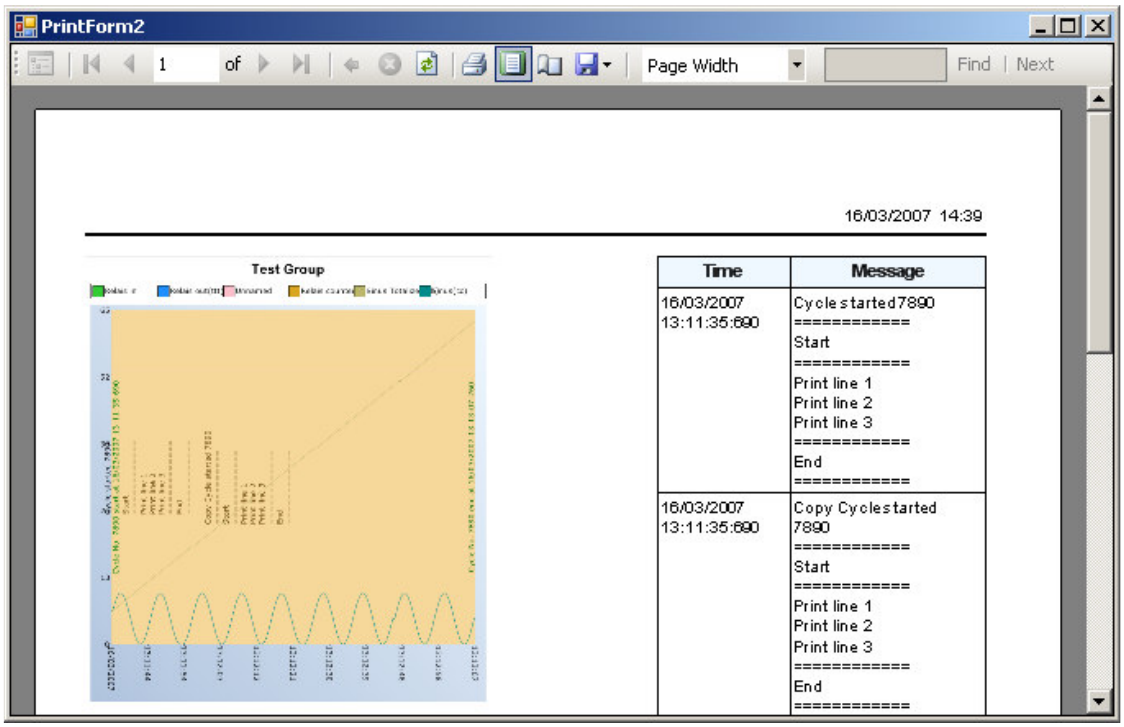
- **Message search:** you can search for a cycle with specific message using message search text box. Type in a message and then click “Search”, the message will be searched. To search the next occurrence of the same text, click “Search” again.
- **Jump to Message:** If you want to go to the time line of a specific message, you can click on the message in the message box. This will move the chart to that time.

Printing

You can print out chart and messages.

Printing will reflects the current chart portion and messages. This means the application will print the current image of the chart you see and all the messages in message list box.

If you want to print only messages from a specific cycle, select the cycle using cycle combo box and enable “Fit cycle to screen” function.



Example of print dialog

Table view

When you click “Toggle Table view” button, the Chart view is replaced by table view as shown.

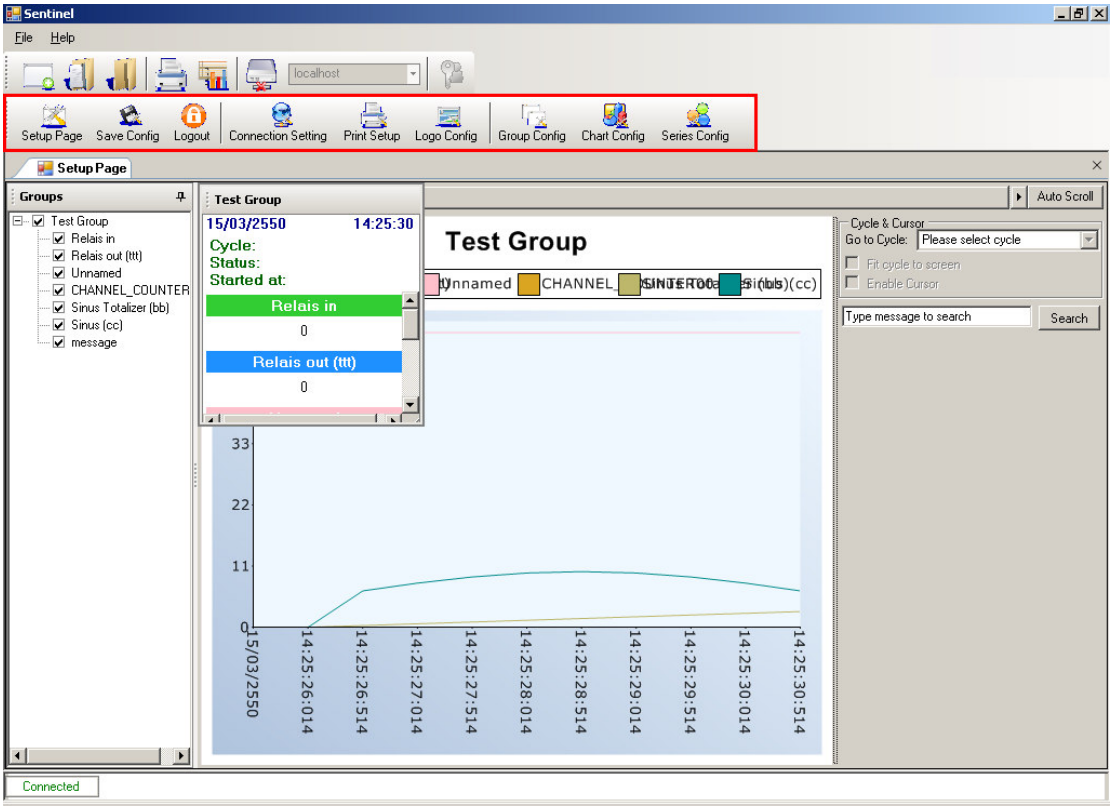
	Date/Time	Message	Relais in	Relais out(ttt)	Unnamed	Relais counter	Sinus Totalizer(bb)	Sinus(cc)
1	16/03/2007 13:04:35:000		0	0	53	0	0	0
2	16/03/2007 13:04:35:500		0	0	53	0	0	0
3	16/03/2007 13:04:36:000		0	0	53	0	0.31	6.55
4	16/03/2007 13:04:36:500		0	0	53	0	0.63	7.94
5	16/03/2007 13:04:37:000		0	0	53	0	0.94	9.05
6	16/03/2007 13:04:37:500		0	0	53	0	1.26	9.76
7	16/03/2007 13:04:38:000		0	0	53	0	1.57	10
8	16/03/2007 13:04:38:500		0	0	53	0	1.88	9.76
9	16/03/2007 13:04:39:000		0	0	53	0	2.2	9.05
10	16/03/2007 13:04:39:500		0	0	53	0	2.51	7.94
11	16/03/2007 13:04:40:000		0	0	53	0	2.83	6.55
12	16/03/2007 13:04:40:500		0	0	53	0	3.14	5
13	16/03/2007 13:04:41:000		0	0	53	0	3.46	3.45
14	16/03/2007 13:04:41:500		0	0	53	0	3.77	2.06
15	16/03/2007 13:04:42:000		0	0	53	0	4.08	0.95
16	16/03/2007 13:04:42:500		0	0	53	0	4.4	0.24
17	16/03/2007 13:04:43:000		0	0	53	0	4.71	0
18	16/03/2007 13:04:43:500		0	0	53	0	5.03	0.24
19	16/03/2007 13:04:44:000		0	0	53	0	5.34	0.95
20	16/03/2007 13:04:44:500		0	0	53	0	5.65	2.06
21	16/03/2007 13:04:45:000		0	0	53	0	5.97	3.45
22	16/03/2007 13:04:45:500		0	0	53	0	6.28	5
23	16/03/2007 13:04:46:000		0	0	53	0	6.6	6.55
24	16/03/2007 13:04:46:230	Cycle started 7888						
25	16/03/2007 13:04:46:231	Copy Cycle started						

NOTE: you can only scroll to see old data in snap shot (non-live) mode.

Configuration Mode

In configuration mode, the sentinel viewer has the same user interface as in normal mode except that it has the configuration toolbar.

To enter the configuration mode, please see the “Login to a Device” section.



Configuration Type

There are two types of configuration:

Program Configuration

Device Configuration

Program Configuration

This type is configured and stored on the local PC on which the sentinel viewer is running. The following are the configurations:

- Connection Setting
- Print Setup
- Logo Config

More information about these configurations can be found in the configuration toolbar section.

Device Configuration

This type is configured and stored on a device. The following are the configurations:

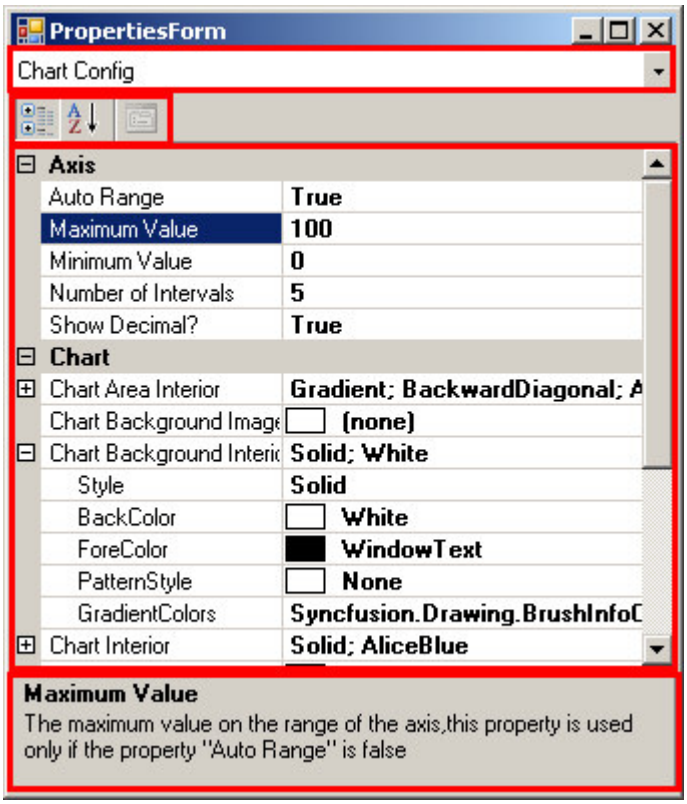
- Group Config
- Chart Config
- Series Config

More information about these configurations can be found in the configuration toolbar section.

Properties Form

A properties form is used to set values in several configurations.

The form contains the following section from top to bottom:



Config Selector

Some configurations have several value sets to be configured, such as Series Config. Each set of values can be selected from the Config Selector.

Properties Grid View Option

The set of values displayed on the properties grid view can be viewed in alphabetical or categorized order.

Properties Grid View

This is where a set of configurations values is displayed. The left column contains the value names to be configured. Values can be set in the right column. The way to set a value is different depending on the value type for example, if the value is of type Color, when clicking the right column a pop up color dialog box will appear from which a color can be selected.

Description Panel

When clicking a value on the properties grid view, a description of the value will be displayed in the panel.

Configuration Toolbar

The tool bar contains the following functions.

Setup Page

Use “Setup Page” button to open the Configuration View. If the view is already opened, it will be activated.

Save Config

All configurations can be saved using “Save Config” button. Program configurations are stored on a local PC and device configurations are stored on a device.

Logout

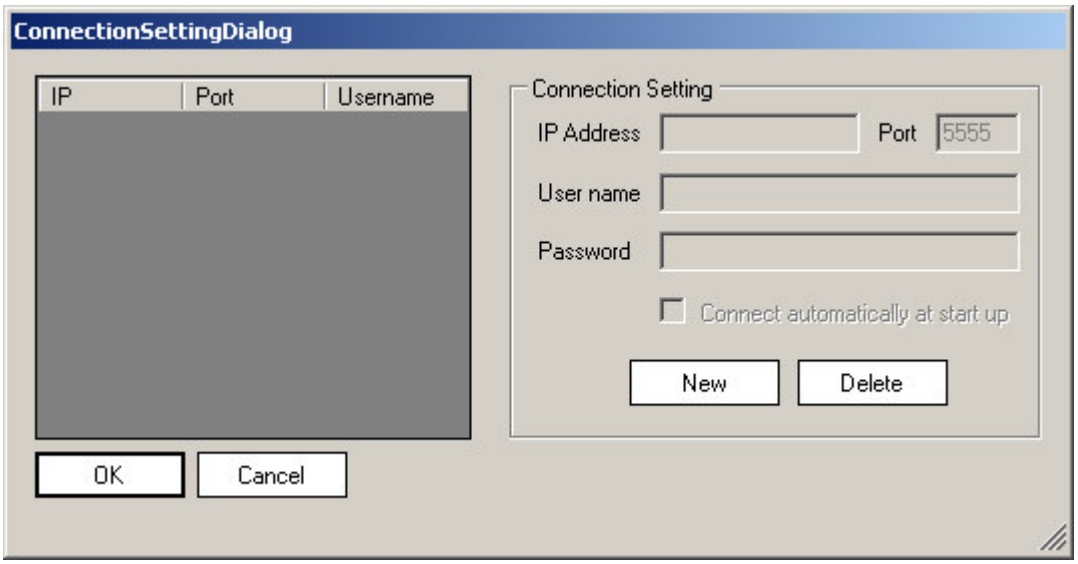
To exit a configuration mode, use “Logout” button.

Connection Setting

To configure the sentinel viewer to auto-connect to devices, use “Connection Setting” button.

Connection Setting Dialog

When the “Connection Setting” button is clicked, the Connection Setting dialog appears.



The table on the left hand side shows current connections that the sentinel viewer connects to on the program startup. The “Connection Setting” panel on the right hand side shows all information of the current connection selected on the table.

Connection Setting Information

IP Address
IP Address represents an IP address or DNS name of a device to which the sentinel viewer connects.

Port
Port represents a port number of a device which the sentinel viewer will use to communicate with.

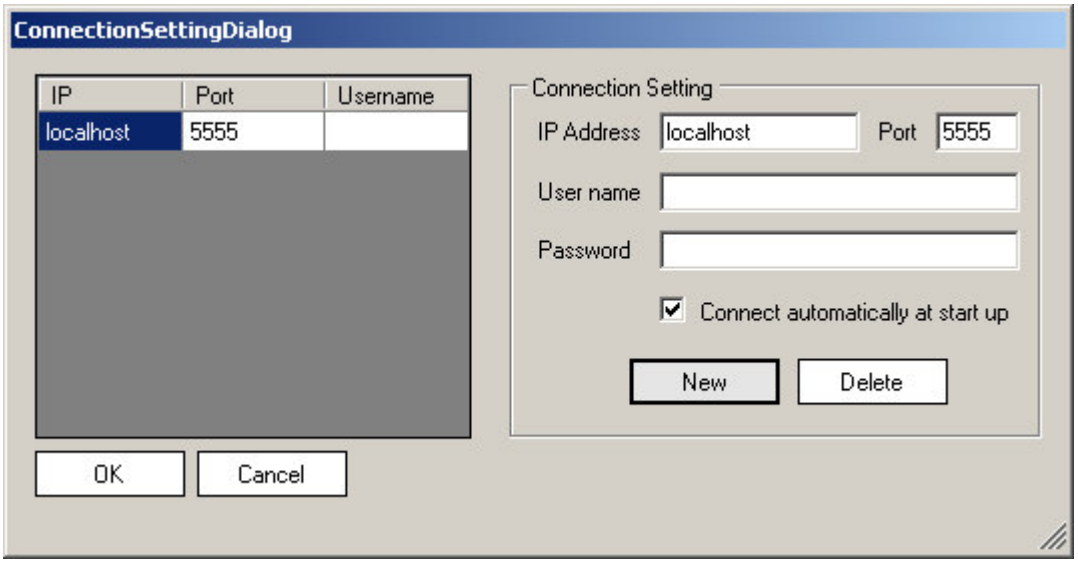
User name
A user name, if required, can be entered here.

Password
A password, if required, can be entered here.

Auto-Connect
If auto-connect to a device is required, check the “Connect automatically at start up” box.

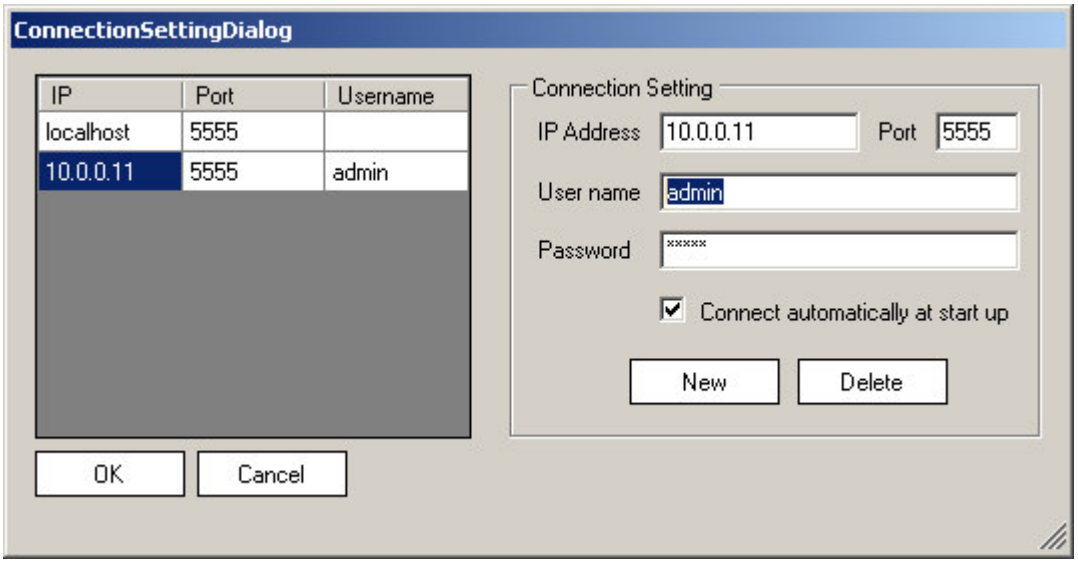
Add New Connection

A new connection can be added by clicking on “New” button. A new row is added to the table and all information can be entered on the “Connection Setting” panel.



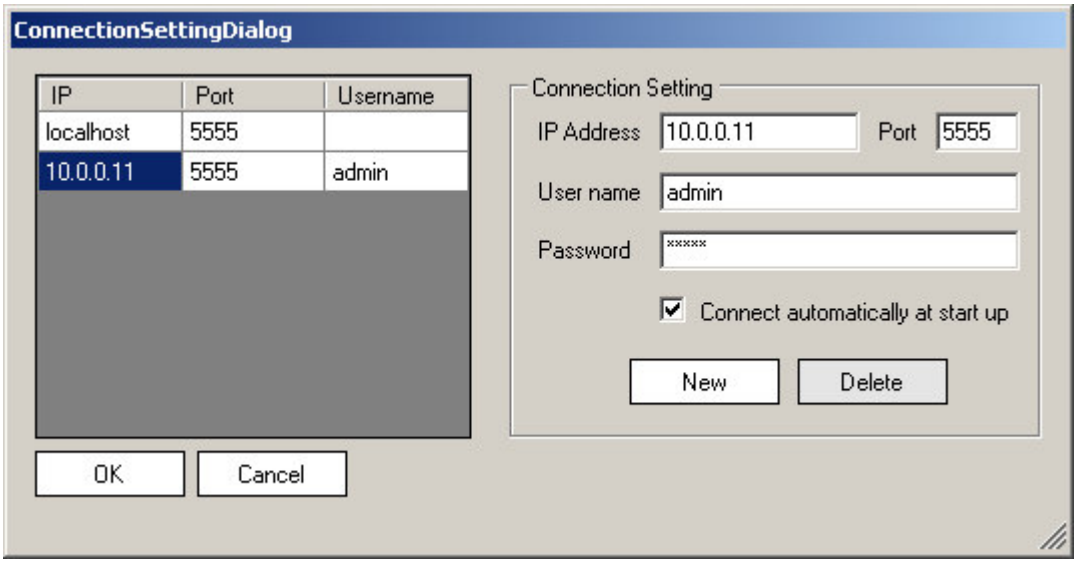
Edit Connection

All current connections can be edited by selecting the row that needs to be edited on the table. Then edit information on the “Connection Setting” panel.



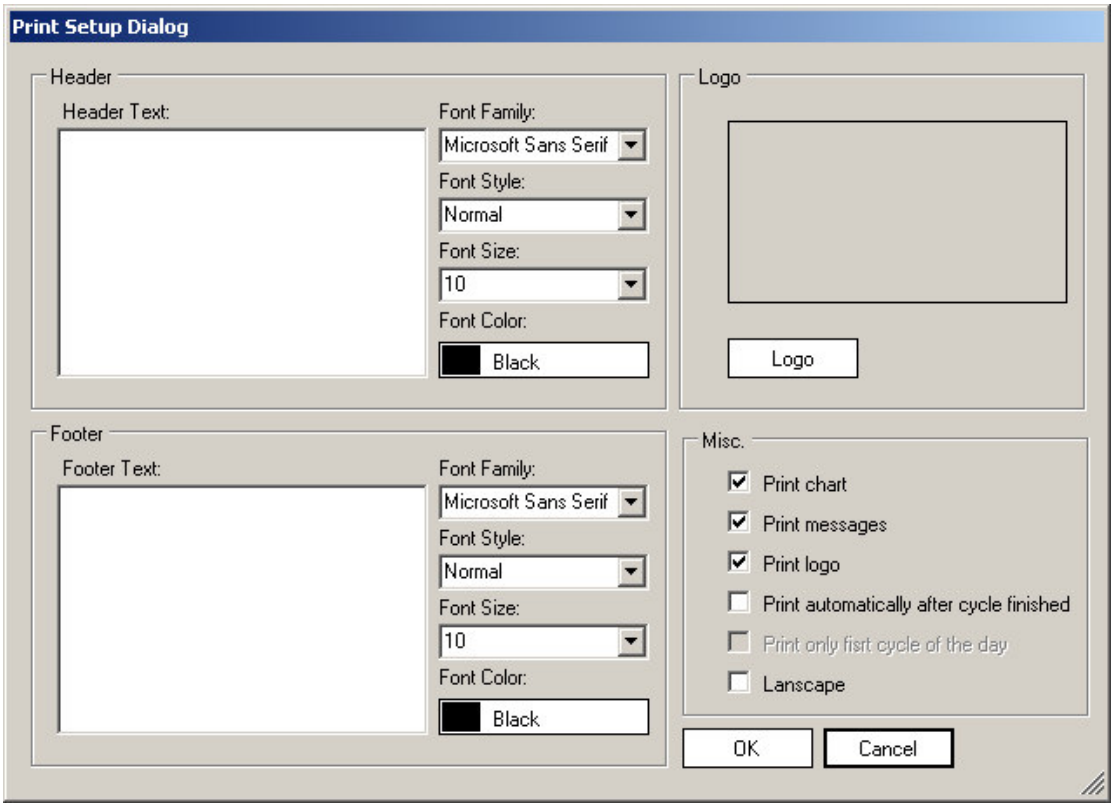
Delete Connection

To delete a connection select the connection on the table then click the “Delete” button. The confirmation dialog appears. Click “Yes” to delete the connection.



Print Setup

Use “Print Setup” button to open the print setup dialog box which can be used to set the page printing options: header, footer, logo and misc.



Header / Footer

Use the text areas to add, edit and delete a header or footer. The font style, size and color can be changed by clicking on the drop down boxes to the right of the text areas.

Logo

A printing page can have a logo. This can be done by clicking on “Logo” button and selecting a picture.

Printing Options

Print Chart
Checking this option prints out the chart.

Print Messages
Checking this option prints out all messages normally . If it is in “Fit Cycle to Screen Mode”, only messages in the current cycle will be printed.

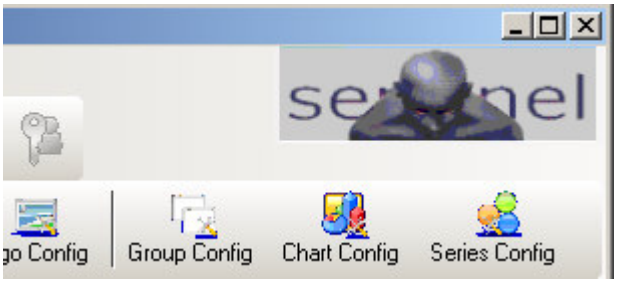
Print Logo
If this option is ticked and a logo is set, it will be printed.

Print automatically after cycle finished
This option has effect only in live mode. If this option is ticked, the page will be printed automatically after each cycle is finished.

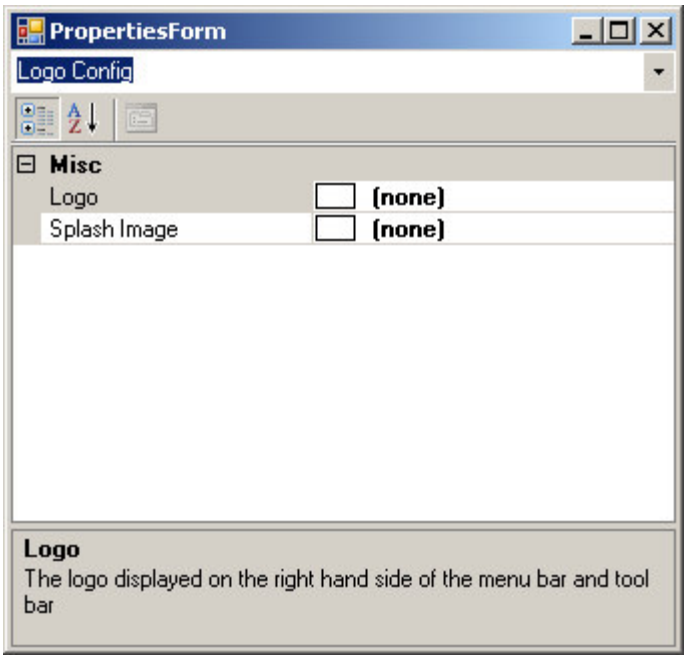
Print only first cycle of the day
This option is available only if the previous option is ticked. If this option is ticked, the page will be printed automatically after the first cycle of the day is finished.

Logo Config

The sentinel viewer can have a logo which will be displayed below on the top right of the program (under the command box) and can also have a splash image displayed before entering the program.



To set a logo and splash image, clicks on “Logo Config” button. The properties form of Logo Config will appear.



Group Config

Group Config is used to configure the background color of the info box and the tree view and also to configure whether to show them or not.

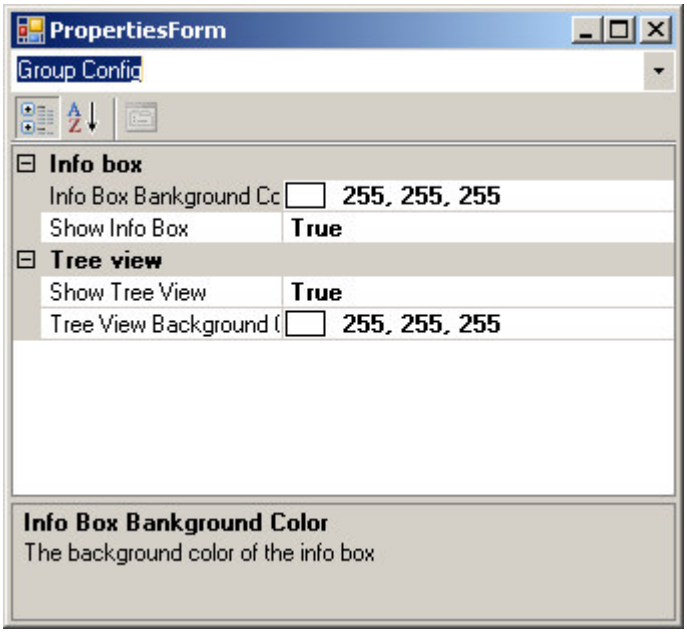
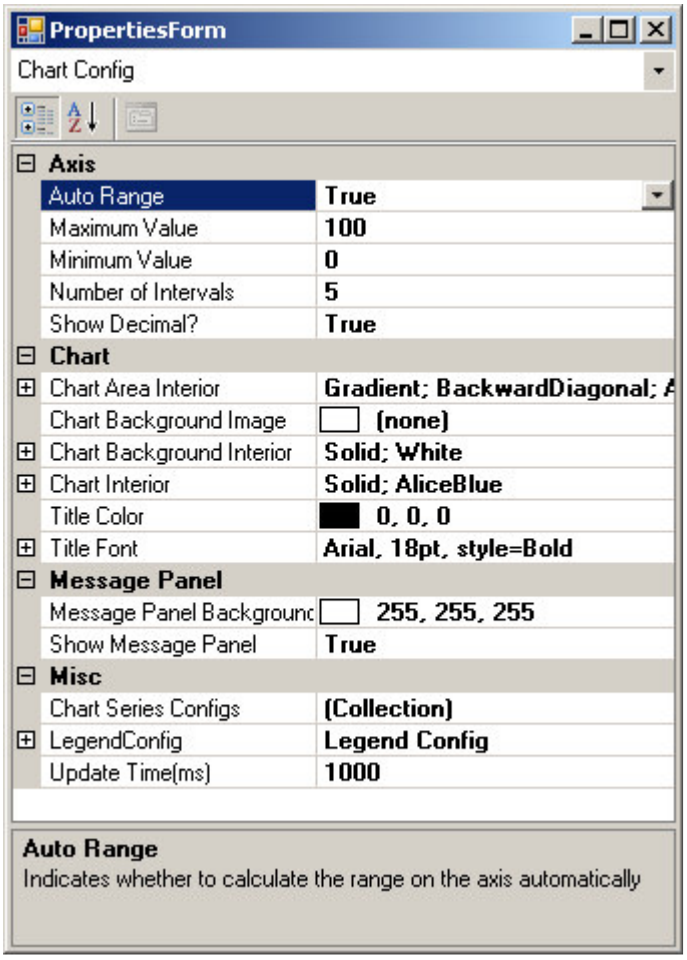


Chart Config

Chart Config is used to configure the chart appearance and other chart options. The followings are details of its values:



Auto Range
Indicates whether to calculate the range on the axis automatically.

Maximum Value
The maximum value on the range of the y-axis, this property is used only if “Auto Range” is set to false.

Minimum Value
The minimum value on the range of the y-axis, this property is used only if “Auto Range” is set to false

Number of Intervals
The number of intervals on the range of the y-axis, this property is used only if “Auto Range” is set to false

Show Decimal
Indicates whether to show a decimal point of value on the y-axis.

Chart Area Interior

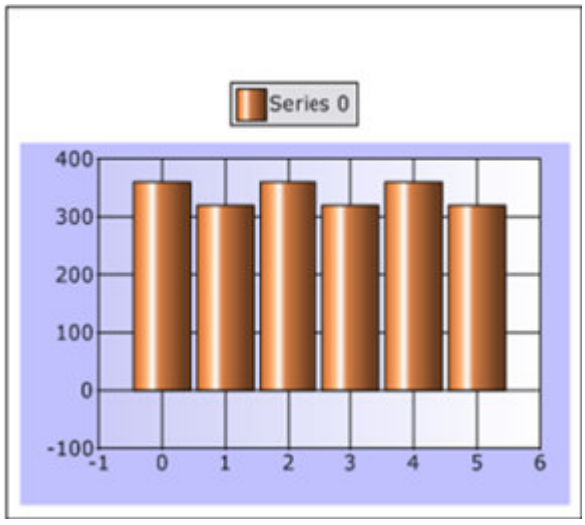


Chart Background Image
The background image of a chart

Chart Background Interior

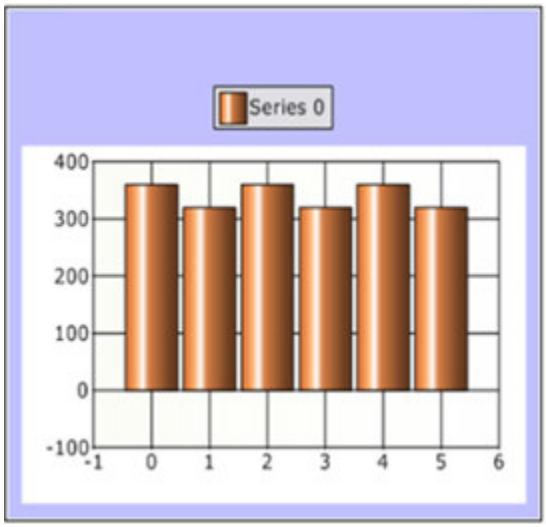
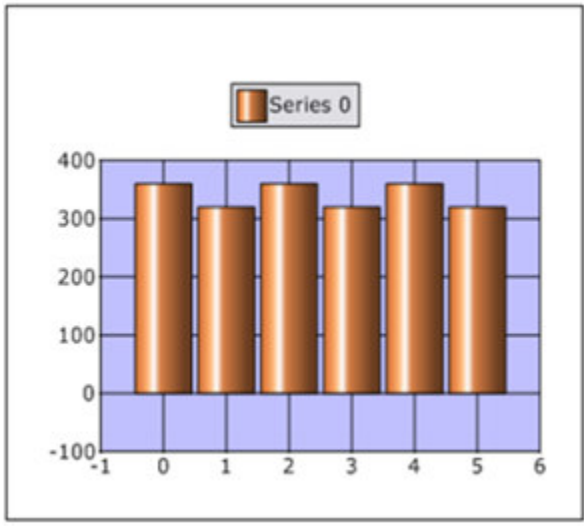


Chart Interior



Title Color
A title color of a chart

Title Font
A title font of a chart

Message Panel Background Color
A background color of a message panel

Show Message Panel
Indicates whether to show a message panel

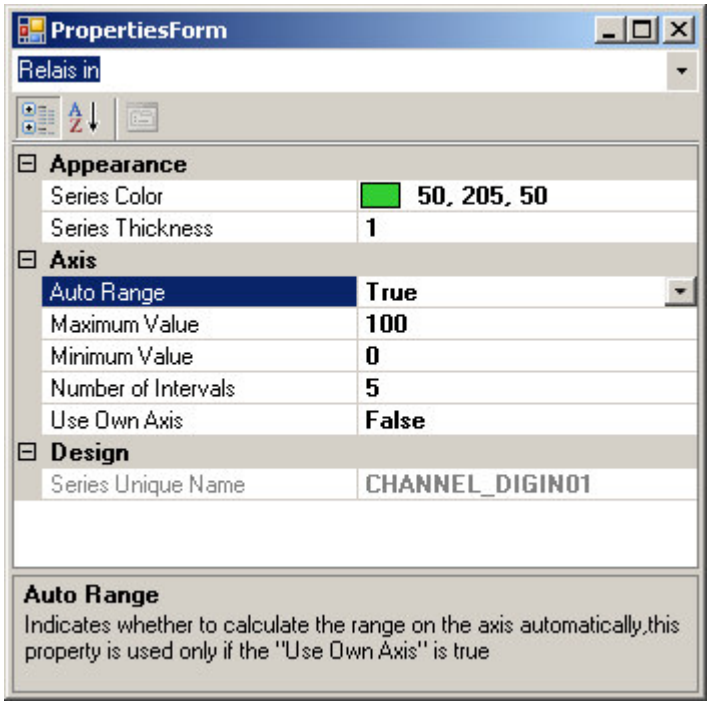
Chart Series Config
Configures series of a chart

Legend Config
Configures a legend of a chart

Update Time (ms)
A chart will update their data for every Update Time (in millisecond)

Series Config

Series Config is used to configure series of a chart. If there are more than one series in a chart, uses "Config Selector" to switch between series (See "Properties Form" section for more information). The followings are details of its values:



Series Color
The color of the series

Series Thickness
The thickness of the series

Auto Range
Indicates whether to calculate the range on its own y-axis automatically, this property is used only if the "Use Own Axis" is true

Maximum Value
The maximum value on the range of its own y-axis, this property is used only if the "Use Own Axis" is true and the "Auto Range" is false

Minimum Value
The minimum value on the range of its own y-axis, this property is used only if the "Use Own Axis" is true and the "Auto Range" is false

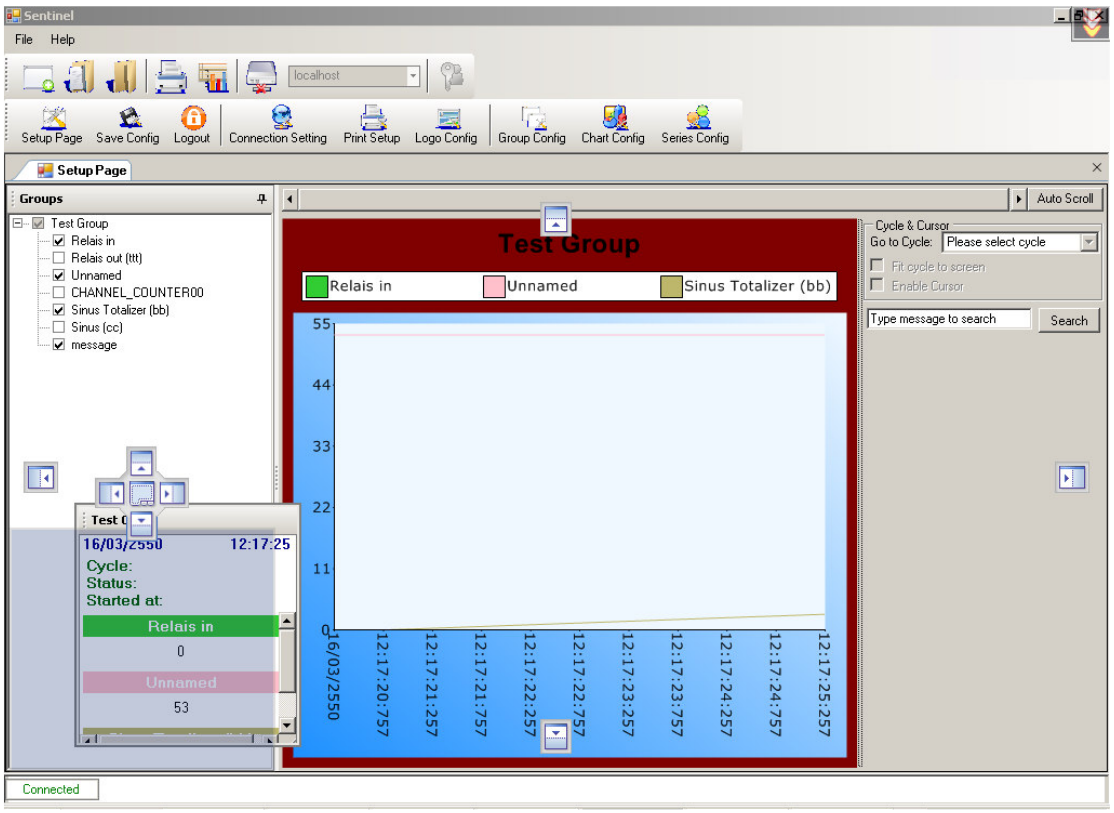
Number of Intervals
The number of intervals on the range of its own y-axis, this property is used only if the “Use Own Axis” is true and the “Auto Range” is false

Use Own Axis
Indicates whether this series has its own y-axis

Other Config

Apart from the configurations which can be configured through the configuration tool bar. There are other configurations that can be configured. The followings are the list of these configurations:

- The info box and tree view can be moved, resized.



- The chart and message panel can be resized.
- Series can be hidden by ticking out the series in the tree view.